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RECOGNITION OF TRIBES CAPSICEAE AND PHYSALEAE, SUBFAMILY SOLANOIDEAE, SOLANACEAE

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ABSTRACT

Two new tribes in Solanaceae are described to accommodate new systematic information about the family. **Capsiceae** is centered on *Capsicum* and related genera, while **Physaleae** is centered on *Physalis* and related genera

KEY WORDS: Solanaceae, Capsiceae, Physaleae, Solanoideae, taxonomy

The genera *Capsicum* L. and *Physalis* L., family Solanaceae, subfamily Solanoideae, have traditionally been placed in tribe Solaneae (Wettstein 1891). They are distanced from *Solanum* L. (type species of the family and of the Solaneae) and most other members of the tribe by distinctive calyces and other features, and the following recognizes their distinctiveness at the tribal level.

Capsiceae D'Arcy, *tribus nov.* Type genus: *Capsicum* L., *Gen. Pl.*, ed. 5:86. 1754.

Herbae perennes vel frutices. Flores campanulati vel rotati. Calyces truncati, interdum dentes subapicales ferenti. Fructus baccati vel drupacei.

The calyx in *Capsicum* lacks the terminal lobes found in other Solanaceae but is apically truncate, sometimes with subapical enations that may resemble terminal lobes. The calyx is hardly accrescent in fruit. In his revision of *Lycianthes*, Bitter (1920) suggested a close relationship between *Lycianthes* and *Capsicum*, and subsequent morphological studies of the diagnostic calyces (D'Arcy 1986; Bernardello & Hunziker 1987) support this, arguing that these two genera form a core group of the new tribe Capsiceae. D'Arcy (1991) suggested that the following genera have calyx features at least superficially similar to *Capsicum* and may also belong to this new

tribe: *Acnistus, Aureliana, Dunalia, Iochroma, Lycianthes, Saracha, Tubocapsicum, Vassobia*, and *Witheringia*.

Physaleae D'Arcy, *tribus nov.* Type genus: *Physalis* L., *Gen. Pl.*, ed. 5: 85. 1754.

Herbae perennes vel frutices. Flores campanulati vel rotati. Calyces dentes terminales ferenti in statu fructu accrescenti. Fructus baccati vel drupacei.

The calyx in *Physalis* has terminal lobes and is accrescent in fruit, surrounding the berry. Anthers are longitudinally dehiscent, ovaries have nectaries, and plants never have prickles. In *Solanum*, calyces are only exceptionally accrescent (*S. sisymbrifolium* Lam., *S. toliarea* D'Arcy & Rakotozafy), anthers are poricidal, ovaries lack nectaries, and plants are often prickly, a suite of characters indicating more than a generic taxonomic distance.

Accrescent calyces occur in some other genera of Solanoideae, (e.g., *Witheringia folliculoides* J.L. Gentry & D'Arcy and *Nicandra physaloides* [L.] Gaertner). This suggests that accrescent calyces may be plesiomorphic in subfamily Solanoideae, appearing as a conservative condition in a few groups, or contrarily that accrescent calyces have risen independently in each of these lineages. In either case, accrescent calyces remain a single useful character to suggest the inclusion of *Physalis* and other genera in the new tribe, Physaleae. The following genera, which have similar accrescent calyces, are sometimes referred to as the 'physaloid group' and were suggested by Averett (1977, 1979), D'Arcy (1991) or Axelius (1996) to be closely allied to *Physalis*. They may also belong to this new tribe: *Archiphysalis, Brachistus, Chamaesaracha, Deprea, Jaltomata, Leucophysalis, Margaranthus, Mellissia, Quincula, Physaliastrum*, and *Withania*.

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